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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,524

10/28/2005

Cuong Pham-Huu

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EXAMINER

CORNO JR, JAMES A

ART UNIT

PAPER NUMBER

4162

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,524	Applicant(s) PHAM-HUU ET AL.	
	Examiner JAMES CORNO	Art Unit 4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/7/2005 and 10/28/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: degree of polarity is incorrectly defined in the specification (page 7, lines 17-21). The less polar agent should be defined as having a lower dipole moment instead of a greater dipole moment.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 11-19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milone, et al. (WO 0067902 A1) in view of Grindatto, et al. (U.S. Patent No. 5,427,761). Milone teaches a silicon carbide support (Milone claim 1) successively treated with an aqueous solution (paragraph 15), corresponding to "agent A" of the instant claims 1 and 18, and a palladium compound in an organic solvent such as toluene (paragraph 44), corresponding to "agent B" of the instant claims, in which the palladium compound is the "active agent precursor". Milone further teaches the thermal breakdown of this precursor (Milone claim 2). Milone fails to teach the support structural dimension limitations of the instant claims. However, Grindatto teaches a

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silicon carbide structure with a specific surface area of $20 \text{ m}^2/\text{g}$ (col. 11, lines 2-4), macropores 2-5 μm in diameter, and mesopores 9-15 nm in diameter (col. 6, lines 56-68), for use as a catalyst support structure (col. 1, lines 8-12). These structural specifications fall within the ranges of the instant claims. Since Grindatto specifically mentions the use of these supports in exhaust systems, it would have been obvious to one of ordinary skill in the art at the time of the invention to use them with Milone's impregnation methods for the stated purpose of catalyzing carbon monoxide.

Regarding claims 2-5, Milone teaches the use of an organo-metallic palladium compound ($\text{Pd}(\text{acac})_2$) in toluene.

Regarding claims 6-8 and 19, Grindatto teaches a silicon carbide foam with a specific surface area of $20 \text{ m}^2/\text{g}$, which falls within the ranges of the instant claims.

Regarding claim 11, Milone teaches a drying step after the impregnation (Milone claim 2).

Regarding claim 12, Milone teaches an aqueous solution treatment, which constitutes an introduction of hydrophilic functions on the surface of the support.

Regarding claims 13 and 17, Milone teaches a calcination step under air at 400°C (paragraph 44), thereby oxidizing the palladium.

Regarding claims 14-16, Milone teaches a heated reduction treatment under H_2 (paragraph 44).

Claims 1, 9-10, 18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milone in view of Dubots (U.S. Patent No. 5,217,930). Milone

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teaches all limitations of claims 1 and 18 except for the structural dimension limitations, as described above. However, Dubots teaches a silicon carbide structure with a specific area of $30 \text{ m}^2/\text{g}$ and a group of pores with an average diameter of 100 nm (col. 7, lines 46-52) for use as a catalyst support structure (col. 1, lines 17-26). These structural specifications fall within the ranges of the instant claims. Since Dubots specifically mentions the use of these supports in exhaust systems, it would have been obvious to one of ordinary skill in the art at the time of the invention to use them with Milone's impregnation methods for the stated purpose of catalyzing carbon monoxide.

Regarding claims 9-10 and 20-21, Dubots teaches a group of pores with a mean diameter of 100 nm, which falls within the range of the instant claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES CORNO whose telephone number is (571)270-5829. The examiner can normally be reached on Monday-Thursday 9:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES CORNO/
Examiner, Art Unit 4162

/Jennifer McNeil/
Supervisory Patent Examiner, Art Unit 4162